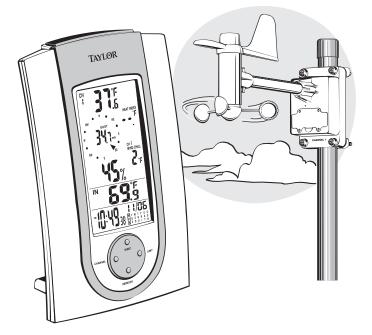


# Digital Wireless Weather Station with Wind Speed Sensor

# Leading the Way in Accuracy®



# **Instruction** Manual

Thank you for purchasing the Taylor® Digital Wireless Weather Station with Wind Speed Sensor. This state-of-the art measurement instrument is engineered and designed to meet the highest quality standards...to assure you uncompromising accuracy and consistently dependable, convenient performance. This instrument will provide measurements of wind speed & direction, wind chill, heat index, temperature & humidity.

This manual will describe how to set up and operate your Wireless Weather System. In order to optimize the unit's function, please read this instruction manual carefully before use...and keep it handy for future reference.

## This manual includes information about:

- 1. Items and materials needed for installation and set up
- 2. How to assemble the remote Wind Gauge Sensor
- 3. How to install the home receiver unit batteries
- 4. How to select and test a location for the remote Wind Gauge Sensor
- 5. How to mount the Wind Gauge Sensor
- 6. How to install the batteries and calibrate the Wind Gauge Sensor
- 7. How to use and read the data on the home receiver unit

# Items Required for Installation and Set Up

# Items included in this package :

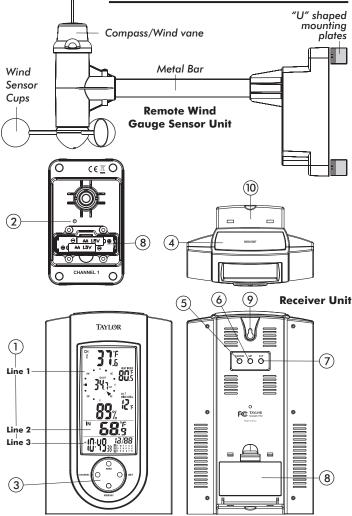
- 1. Home Receiver Unit (an indoor unit which displays temperature and other readings)
- Remote Wind Gauge Sensor (an outdoor sensor unit which transmits wind, temperature & humidity data to the receiver unit)
- Mounting hardware for the Wind Gauge Sensor (2 "U"-shaped metal plates, 4 sets of Hex screws & nuts).
- 4. Instruction manual

# Additional items needed for installation (not included):

#### 1. A 1" to 1 1/4" diameter MAST and hardware

- 2. A small Phillips screwdriver (for the battery compartments and wind vane screws)
- A total of 4 AA batteries (Lithium batteries are recommended, especially for the outdoor Wind Gauge Sensor, as lithium batteries will last longer and thus will not need to be replaced as often as alkaline batteries)

# **Description of Parts**



# Main Features & How to Access Functions

### 1 - LCD Readout (Receiver Unit):

- Line 1: Displays Outdoor Temperature and Humidity, Heat Index, Wind Chill, and Wind Speed & Direction.
- Line 2: Displays indoor temperature.
- Line 3: Clock displays current time and date.

## 2 - LED Indicator (Remote Wind Gauge Sensor):

Flashes when remote sensor transmits a reading.

#### 3 - Multi-Function Button (Receiver Unit):

A) "CHANNEL" Button: Press to view the readings of channel 1, 2, 3 or auto scroll (which will show each display for 10 seconds). Press and hold 3 seconds to search for a remote sensor signal.

B) "MEMORY" Button: Press once to view maximum temperature, humidity, heat index, and wind speed readings. Press again to view minimum readings. Press again to return to current readings. While the min or max reading is displayed, press and hold for 3 seconds to clear the min or max memory.

- C) "UNIT" Button: Press to toggle between wind speed measurement displays: miles per hour (mph), kilometers per hour (km/h), meters per second (m/s), knots, or Beaufort (bft).
- D) "WIND" Button: Press to display average wind speeds and gust wind speed.

### 4 – "Backlight" Button (on top of Receiver Unit):

Press to illuminate the receiver's LCD screen with an extended backlight.

### 5 – "Clock" button (on back of Receiver Unit):

Press and hold 3 seconds to enter Clock & Calendar Setting mode.

#### 6 – "Up" button (on back of Receiver Unit):

Press to advance settings one step forward. Press and hold 3 seconds to fast advance.

### 7 -°F/°C Button (on back of Receiver Unit):

Press to select °F or °C temperature scale.

# 8 - Battery Compartments (On back of Receiver Unit and on top of Wind Gauge Sensor base):

The home receiver unit and remote Wind Gauge Sensor each use 2AA batteries. Lithium batteries are recommended, especially for the outdoor Wind Gauge Sensor, as lithium batteries will last longer and thus will not need to be replaced as often as alkaline batteries.

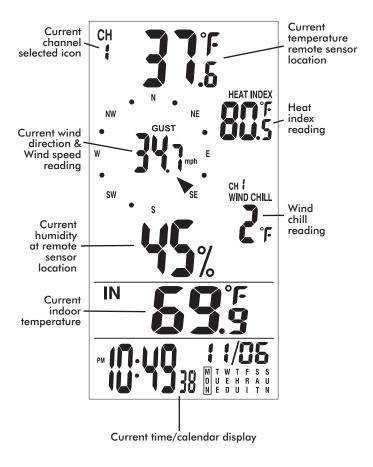
### 9 - Wall Mount (On back of Receiver Unit):

The receiver features a recessed key hole to secure each unit to a nail or other appropriate wall hanger.

### 10 - Table Stand (Fits on back of Receiver Unit):

Allows stable placement of receiver unit on a flat surface. Insert table stand prongs into slots located at the lower back side of the receiver unit.

# (Receiver Unit)



## Assembling the Wind Gauge Sensor

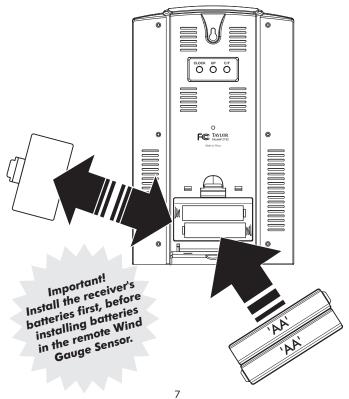
The Wind Gauge Sensor ships in 2 pieces: the base unit and the compass/wind direction pointer. To attach the compass/pointer to the base unit, you will need a small Phillips screwdriver (not included).

- 1. On the back side of the compass, there is a hollow area that will fit onto the wind sensor base unit. Align the hole in the center of the hollow area with the metal prong on the base unit. Push gently on the compass/pointer until it is all the way on the prong.
- There is a screw hole on the side of the compass/wind vane. Place the included screw into the hole and tighten. This will secure the compass/wind vane to the base unit.



# Important: install the receiver's batteries first, before installing batteries in the remote Wind Gauge Sensor:

- 1. Remove the battery compartment cover, located on the back of the receiver unit.
- **2.** Insert 2 AA batteries (lithium recommended) as indicated by the polarity symbols marked inside the battery compartment.
- 3. Replace the battery compartment cover.
- 4. After battery installation, the receiver unit will automatically search for remote sensors for 2 minutes. The displays on the LCD screen will flash during this Search mode.



#### Selecting and Testing a Location for the Remote Wind Gauge Sensor

The Wind Gauge Sensor can measure temperature, relative humidity, and wind speed and direction. It will then transmit these readings back to the home receiver unit, up to a distance of 200 feet.

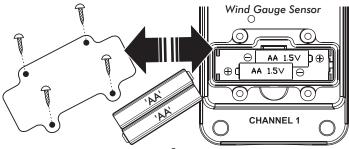
Before mounting the remote Wind Gauge Sensor, measure the distance between the monitor and the sensor to be sure they are within an effective transmission range (within 200 feet), and that there are no physical obstructions between the units (such as a shed or trees) that might block transmission signals. The Wind Gauge Sensor should not be blocked by anything on the top or sides, so that wind can freely reach the Sensor for accurate speed and direction reading.

**Note:** The effective range is vastly affected by the building materials and where the receiver and remote units are positioned. Try various set ups for the best results. Shorten the distance between receiver and remote units when necessary.

# Important: Though the remote unit is weather-resistant, it should never be submerged in water.

It is recommended to perform a transmission test before permanently mounting the remote Wind Gauge Sensor unit, in case it needs to be moved. To test that the monitor can receive the remote sensor's transmissions:

- 1. First install batteries into the home receiver unit, as described in the previous section.
- 2. To install the Wind Gauge Sensor's batteries, first remove the 4 screws that secure the battery compartment cover (located on the top of the base) and then remove the cover.
- 3. Insert 2 AA batteries as indicated by the polarity symbols marked inside the battery compartment. PLEASE NOTE: Lithium batteries are recommended, as they will last longer and thus will not need to be replaced as often as alkaline batteries.



Selecting and Testing a Location for the Remote Wind Gauge Sensor Cont.

- Replace the battery compartment cover, and replace and tighten the screws.
- 5. To test for a transmission connection, press and hold the "CHANNEL" button on the receiver for 3 seconds. The display will begin to flash as the receiver searches for the remote sensor signal.
- 6. When a transmission connection is established, the receiver's LCD screen will display the wind direction, wind speed, temperature and humidity readings broadcast by the remote Wind Gauge unit.
- 7. If these readings do not appear on the receiver within 10 minutes, the transmission has failed. Check that there are no physical obstructions between the units that might block transmissions, such as sheds or trees. If necessary, shorten the distance between the receiver and remote units. Remove all the batteries from the remote, wait at least 10 seconds, and then install the batteries again. Repeat steps 4-6 until a successful transmission is established.
- 8. <u>IMPORTANT:</u> Remove the batteries from the Wind Gauge Sensor before proceeding with mounting and calibration steps. The batteries will be reinstalled later, after the Wind Gauge's direction is calibrated North (see section on Calibrating the Wind Gauge Sensor & Installing Batteries).

Mounting the Wind Gauge Sensor

IMPORTANT: Before mounting, be sure the receiver unit and the wind gauge sensor are successfully transmitting readings to avoid having to move and remount the wind gauge sensor again. See the previous section on "Selecting and Testing a Location for the Sensor" on how to test for transmission signals.

#### Choosing a Location for the Wind Gauge Sensor

The Wind Gauge Sensor may be placed in a variety of places around the home or yard, as long as the sensor is able to transmit readings to the home receiver unit. Please keep in mind that objects such as trees and buildings may block wind gusts. Wind and temperature accuracy may vary between locations. Try to locate the Wind Gauge Sensor in an open area where the wind will be the least blocked. Possible locations for the Wind Gauge Sensor are:

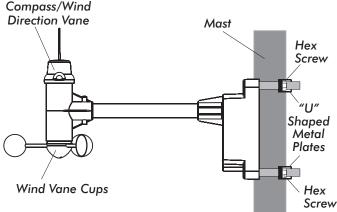
- **1.** On the roof of a house (best wind accuracy is most likely here, as there will be fewer obstacles at a high point).
- 2. On a fence post or garden shed (the more open the area, the better the wind accuracy).
- **3.** A soft ground location in a yard (again, the more open the area, the better the wind accuracy, as a house or trees may block the wind from reaching the sensor).

#### Mounting the Wind Gauge Sensor

#### To mount the Wind Gauge Sensor to a mast, you will need:

- A 1" to 1 1/4" diameter mast (not included).
- Hardware to fasten the mast to the mounting location (not included).
- If necessary, mount and ground a mast at the selected location (such as a roof or fence post) as directed in the instructions provided by the mast (not included).
- Hold the Sensor base up against the mast (see *illustration*). The metal bar is horizontal to the mast. The Wind Vane Cups should point down, and the Compass/Wind Direction Indicator should point up.
- 3. Place 2 hex screws (included) into the 2 holes on the top of the base.
- 4. On the bottom of the base, place one of the "U" shaped metal plates (*included*) around the mast and through the screws. The mast will be between the plate and the sensor base.
- 5. Tighten 2 hex nuts (*included*) on the screws using an Allen wrench to hold the sensor to the mast.
- 6. Repeat with the bottom two holes to tightly secure the sensor to the mast.

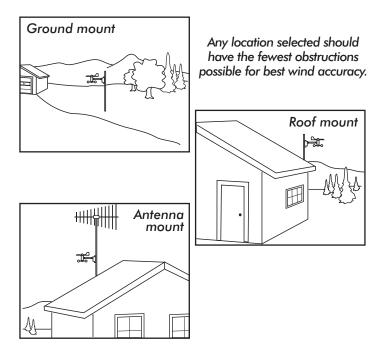
**Mounting Option:** If another mast has been previously installed (for example, for mounting an antenna), the wind gauge sensor may be mounted on that existing mast. Or, if there is an existing piece of 1 to 1 <sup>1</sup>/<sub>4</sub>" diameter PVC pipe or other mast that is not the correct size (such as a kitchen sink vent), an extender may be placed on that pipe, then an extension mast may be attached to it.



## Mounting the Wind Gauge Sensor(continued)

### To mount the Wind Gauge Sensor into the ground:

- Select a location on an open, flat area of ground with the fewest obstructions possible for best wind accuracy. Choose a spot with soft soil, so as not to damage the mast when going into the ground, but firm enough that the mast will not tip over after going in the ground. No cables, pipes or other objects should be under the ground at this location.
- Push one end of the mast slightly into the ground. Place a wood block against the other end of the mast. Tap the block with a hammer or mallet against the block until the mast is buried deep enough in the ground to be stable.
- Attach the remote Wind Gauge Sensor to the mast as previously described.

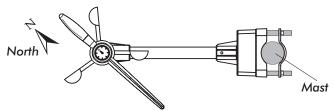


## Calibrating the Wind Gauge Sensor & Installing Batteries

After mounting the Wind Gauge Sensor, the wind vane needs to be calibrated due north so that the Sensor can properly measure the wind direction and transmit that reading to the home receiver. **Be sure the batteries are removed from the Wind Gauge Sensor before the calibration:** Since the Sensor will orient north right after the batteries are installed, the wind vane needs to be pointing north first, otherwise the wind direction data transmitted to the home receiver will be incorrect.

**Important:** The same Wind Direction calibration procedure (steps 2 to 5) is needed for the first set up **and** after every battery replacement.

- Mount the Wind Gauge Sensor in a proper location as previously described. If the batteries are still in the sensor, open the battery compartment cover and remove the batteries.
- 2. Use the compass on the top of the Sensor to determine due north. Turn the smaller, propeller-shaped pointer end of the Wind Direction Indicator so it is pointing due north. Hold the Pointer facing due north; do not allow it to turn.



- 3. Insert 2 AA batteries as indicated by the polarity symbols marked inside the battery compartment. (*Important:* As described in Step 2, be certain the Wind Direction Pointer on the Wind Gauge Sensor is pointing north before inserting the batteries. Also, lithium batteries are recommended for the Sensor, as they will last longer and thus will not need to be replaced as often as alkaline batteries).
- 4. The red LED indicator above the battery cover of the Wind Gauge Sensor will flash few seconds after battery installation, indicating Wind Direction calibration is complete.
- 5. Replace the battery cover and tighten the screws.
- If the Wind Direction Indicator is not pointing due north when the red LED first flashes, calibration will not be accurate. Remove the Wind Gauge Sensor batteries <u>and</u> repeat steps 2 - 5.
- 7. Hold the "CHANNEL" button on the monitor to search for remote transmitter. If transmission is successful, readings will appear on the receiver within 10 minutes. If readings do not appear, reorient the units and repeat the above calibration steps.

## Setting up Additional Temperature/Humidity Sensors (not included)

The remote Wind Gauge Sensor will transmit temperature and humidity readings from one location. With the purchase of an additional 1 or 2 temperature/humidity sensors (not included), this Wireless Weather System can monitor temperature and humidity readings in 1 or 2 additional locations. These remote sensors can be used to monitor temperatures in a garage, basement, child's room, wine cellar, or any other location within the transmission range. Please note these sensors can only monitor temperature and humidity; wind-related readings can only be measured by the one Wind Gauge Sensor that is included in this package.

To purchase temperature/humidity remote sensors (Taylor model 1438) visit www.partshelf.com.



#### To add a temperature/humidity Sensor (purchased separately):

- 1. Select a location for the remote sensor that is within the effective transmission range.
- 2. Lift off the bracket stand, located on the back of the remote sensor, to access the battery compartment cover.
- **3.** Remove the 4 screws that secure the battery compartment cover and then remove the cover.
- 4. Assign channel 2 or 3 to the remote sensor by setting the slide switch inside the battery compartment. (Channel 1 is already assigned to the Wind Gauge Sensor and should not be used by any other remote sensors).
- **5.** Insert 2 AAA alkaline batteries as indicated by the polarity symbols marked inside the battery compartment.
- 6. Press and hold the "CHANNEL" button on the front of the receiver unit to search for all remote sensor signals.
- 7. Press the Tx button in the remote battery compartment to send a transmission to the receiver. The red LED Indicator light will flash when a signal is transmitted. Remote unit temperature updates will then be transmitted around every 35 seconds.
- 8. Replace the battery compartment cover, replace and tighten screws and reattach the bracket stand.
- 9. When transmission connection is established, the respective temperature and humidity of the selected remote channel will appear on the home receiver's LCD screen. Note: If dashes are still displayed for that channel on the receiver unit, press the Tx button again to send another transmission.
- **10.** Press the **"CHANNEL"** button to toggle between indoor and remote sensor temperature/humidity displays.

## How to Set the Clock and Calendar

The clock may be set to display in 12 or 24 hour format.

#### To set the time and date:

- 1. Press and hold the **"CLOCK"** button, located on the back of the receiver unit. The time display will show the default year.
- 2. Press the "▲" button to select data in the following sequence: Year>Month>Date>Hour>Minute>12/24 hour format>Time Offset (Hr). (Note: Set the Time Offset to "0".) After each selection press the "CLOCK" button to enter.
- 3. Press the "CLOCK" button after the last entry to return to the time display.

## How to Read Temperatures and Other Displays

## INDOOR/OUTDOOR TEMPERATURE & OUTDOOR HUMIDITY

- 1. The current Remote Temperature display is located at the top of the LCD screen. The current Remote Humidity % display is in the middle of the screen. The current Indoor Temperature is located between the Humidity and Clock displays.
- Press "C/F" button on the back of the receiver to select °F or °C temperature scale.
- 3. Press "CHANNEL" button to toggle between indoor, Ch1, Ch2, Ch3 or auto scroll (C) displays (if additional remote temperature / humidity sensors are in use, purchased separately). The auto scroll option will display the remote sensor readings for 10 seconds each.

**Note:** Outdoor temperature & humidity sensors are built inside the Wind Gauge Sensor. These readings are automatically assigned to Channel 1. Additional remote temperature/humidity sensors may be purchased separately, and they should be assigned to Channel 2 or 3 only. See the section on Setting up Additional Temperature/Humidity Sensors.

# OUTDOOR HEAT INDEX

The Heat Index combines temperature and relative humidity for an "apparent" temperature, or how hot the heat-humidity combination actually feels. The Heat Index reading appears on the right side of the LCD screen, between the Outdoor temperature and the Wind Chill reading.

**Please note:** The Heat Index feature will only work for temperatures above 57°F /14°C. Outside this range, the Heat Index will read "LL.L". When the temperature rises above 57°F / 14°C, the Heat Index will begin to function normally again.

If more than one remote sensor is in use (up to 2 remote temperature /humidity sensors may be purchased separately), press the **"CHANNEL"** button to toggle between Ch1, Ch2, Ch3 or auto scroll ( C) displays. The auto scroll option will display the indoor readings and remote sensor readings for 10 seconds each.

# How to Read Temperatures and Other Displays (continued)

Wind Chill combines temperature and average wind speed for an "apparent" temperature, or how cold air on exposed skin actually feels. The Wind Chill reading appears on the right side of the LCD screen, below the Heat Index reading.

#### WIND SPEED & DIRECTION

The Wind Gauge Sensor samples the wind speed and direction and transmits these readings to the home receiver unit. The Wind Speed & Direction is the circular display on the left side of the LCD screen, left of the Heat Index and Wind Chill displays.

The Wind Direction is indicated by the arrow pointer icons surrounding the Wind Speed reading. The receiver displays 16 wind directions. Eight of the wind directions are marked on the display: N for north, S for south, SW for Southwest, etc. If the wind direction is between North and Northwest, for example, the arrow will point to the dot between the two directions.

The Wind Speed appears in the center of the arrow icons. The Wind Speed can display in miles per hour (mph), kilometers per hour (km/h), meters per second (m/s), Knots, or Beaufort (bft). Press the **"UNIT"** button on the front of the receiver unit to change the display units.

The Wind Gauge Sensor measures both an average wind speed and the greatest wind speed, or wind gust. The Average Wind Speed reported is an average of wind speed over the last 2 minutes. The Wind Gust reported is the maximum wind speed that occurred in the last 10 minutes. Press the **"WIND"** button on the front of the receiver unit to switch between Average ("AVG") and Wind Gust ("GUST") displays.

## MAXIMUM /MINIMUM MEMORY

Press the **"MEMORY"** button on the front of the home receiver repeatedly to view the maximum & minimum values of temperature, humidity, heat index or wind speed readings. To clear the memory record, press and hold the **"MEMORY"** button while the respective values are displayed onscreen.

### Backlight

Press the **"BACKLIGHT"** button for an extended green backlight to illuminate the receiver's LCD screen for easy viewing.

## Low Battery Warning

When the batteries on the receiver unit or the remote unit are low, the Low Battery icon () will light up on receiver unit. If the batteries for the indoor receiver are low, the Battery Icon near the indoor temperature display will light up. If the batteries for the remote Wind Gauge Sensor are low, the Battery Icon near the Ch 1 indicator will light up. If there are 1 or 2 additional temperature/humidity sensors in use (*purchased separately*), a Battery Icon appearing near "Ch 2" or "Ch 3" indicates the batteries in that remote sensor are low. Please Note: Wind direction calibration is required before battery replacement in the Wind Gauge Sensor".

### **Trouble-Shooting**

#### **Disconnected Signals**

If the receiver unit does not receive a transmission from a remote unit channel for 10 minutes, the display will show dashes. To correct this problem:

- 1. Go to the remote location of that channel to check that the unit is properly positioned, within the appropriate transmission range.
- 2. If new batteries are faulty on the initial installation, install fresh batteries. If you did not notice the Low Battery icon warning and the product performed correctly after initial set up, the batteries have lost their charge. Replace the batteries.
- 3. Check to make sure the transmission path is clear of obstacles and interference.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

#### --Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver. Modifications not authorized by the manufacturer may void user's authority to operate this device.

## FCC ID: L5CW132TX-2 (wind gauge transmitter)

#### **Transmission Collision**

Signals from other household devices, such as doorbells, home security systems and entry controls, may interfere. This is normal and does not affect the general performance of this product. The transmission will resume once the interference recedes.

#### Precautions

- The home receiver is intended for indoor use only. It is not sealed against moisture and could be damaged if used outdoors.
- Do not immerse the receiver in water. If you spill liquid on it, dry immediately with a soft, lint-free cloth.
- 3. The remote Wind Gauge Sensor is weather-resistant but not waterproof. Do not immerse it in water or allow snow to accumulate on it. If this accidentally occurs, dry it immediately with a soft, lint-free cloth.
- 4. Though the Remote Wind Gauge Sensor is weather-resistant, it should not be left outdoors in extreme weather conditions. If these conditions become likely to occur, temporarily move the transmitter to an indoor area. Otherwise, permanent damage to the sensor's internal circuits or external wind vane may occur.
- 5. Do not mount the remote Wind Gauge Sensor on a metal surface.
- 6. Do not subject the remote Wind Gauge Sensor to extremely severe temperatures.
- 7. Do not clean either unit with abrasive or corrosive materials. This may scratch plastic parts and corrode electronic circuits.
- 8. Do not subject either unit to excessive force, shock, dust, temperature or humidity. This may result in malfunction, shorter electronic life span, damaged battery or distorted parts.
- 9. Do not tamper with either unit's internal components. Doing so will invalidate the warranty on this product and may cause damage. The unit contains no user-serviceable parts.
- 10. Do not mix old and new batteries. Do not dispose of batteries in fire. Batteries may explode or leak. Do not mix Alkaline, carbon-zinc (standard) or Nickel-Cadmium (rechargeable) batteries. Remove the batteries if the units will not be used for a long period of time.
- **11.** Always read the instruction manual before operating this product.

Important: Though the remote Wind Gauge Sensor is weatherresistant, it should never be submerged in water. If extreme weather conditions are likely to occur, temporarily move the transmitter to an indoor area for protection. Also please note, if using remote temperature/humidity sensors (not included), that below 32°F / 0°C the LCD readout on the remote unit may begin to fail to display. When this happens the remote will still transmit correct temperature readings to the receiver unit but can not be viewed at the remote location. When the temperature rises above 32°F / 0°C the display will begin to function normally again.

#### Specifications

#### Range of temperature measurement:

Receiver unit (indoor only): 32°F to 122°F (0°C to 50°C).

Remote unit: 4°F to 140°F (-20°C to 60°C).

Outdoor Humidity: 20% - 99% RH.

Wind speed range: 0 – 30m/s ~ : 0 − 108 km/h ~ : 0 – 67 mph ~ : 0 – 58.3 knot ~ : 0 - 11 Beaufort.

Transmission: Max. 200 feet (60M) open area, RF434 MHz.

**Channel:** 1 for Wind Gauge Sensor (included), max. 2 for remote temperature/humidity sensors (*not included*).

**Resolution:** 0.1°F for temperature, 1% for humidity

**Power:** 2 AA batteries (not included) for receiver unit, lithium recommended. 2 AA batteries (*not included*) for remote Wind Gauge sensor, lithium recommended.

#### **One Year Warranty**

This product is warranted against defects in materials or workmanship for one (1) year from date of original purchase. It does not cover damages or wear resulting from accident, misuse, abuse, commercial use, or unauthorized adjustment and/or repair.

Should this product require service (or replacement at our option) while under warranty, do not return to retailer. Please pack the item carefully and return it prepaid, along with store receipt showing date of purchase and a note explaining reason for return to:

### Taylor Precision Products 2220 Entrada Del Sol, Suite A Las Cruces, New Mexico 88001 www.taylorusa.com

There are no express warranties except as listed above. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

For additional product information, or warranty information in Canada or elsewhere outside the USA, please contact us through www.taylorusa.com.

#### Made to our exact specifications in China.

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